

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph extending from page 8, line 27 to page 9, line 6 as follows:

The invention is also directed to a a ~~[[aA]]~~ method for determining characteristics of a material comprising illuminating the material with coherent light so as to produce scattered light; autocorrelating the scattered light; preprocessing a signal representative of the scattered light to produce a processed signal; performing at least one of a cumulant analysis and a cluster analysis to provide analyzed data; and associating the analyzed data with particular characteristics of the material.

Please amend the paragraph extending from page 12, line 22 to page 13, line 4 as follows:

Fig. 1A shows the basic configuration of the system. A fiber optic or bundle 2 directs light from a source or lamp 4 onto a sample. There may be a transmission window or sight glass 6 that abuts the sample 8 to be studied. A second fiber optic or bundle 10 collects light from the sample and directs it to a spectrometer 12 ~~[[and]]~~ and/or a detector 14. In an equivalent configuration, the light entering through bundle 2 may already have been predispersed. The spectrometer 12 may be a photodiode array instrument such as those made by Ocean Optics or Micron Optical Systems, an AOTF such as those made by Brimrose, or an FTIR such as those made by PerkinElmer.

Please amend the paragraph extending from page 18, line 28 to page 19, line 7 as follows:

Emulsions are intrinsically unstable mixtures. It is frequently necessary to know the stability lifetimes for a variety of products. For example, the anticipated shelf life of creams and foods is in part determined by the phase stability of the product. Since the invention is a sensitive detector of both scattering (relating to particle size) and absorption (relating to chemical composition), it is useful in determining the status of an emulsion by moving the fiber optic probes to scan along the height h_s 44 of a container with emulsion filled to height h_e 42, as shown in Figure 4. The light source or lamp, 4, and the spectrometer, 12 are shown.